N. A. Wood.

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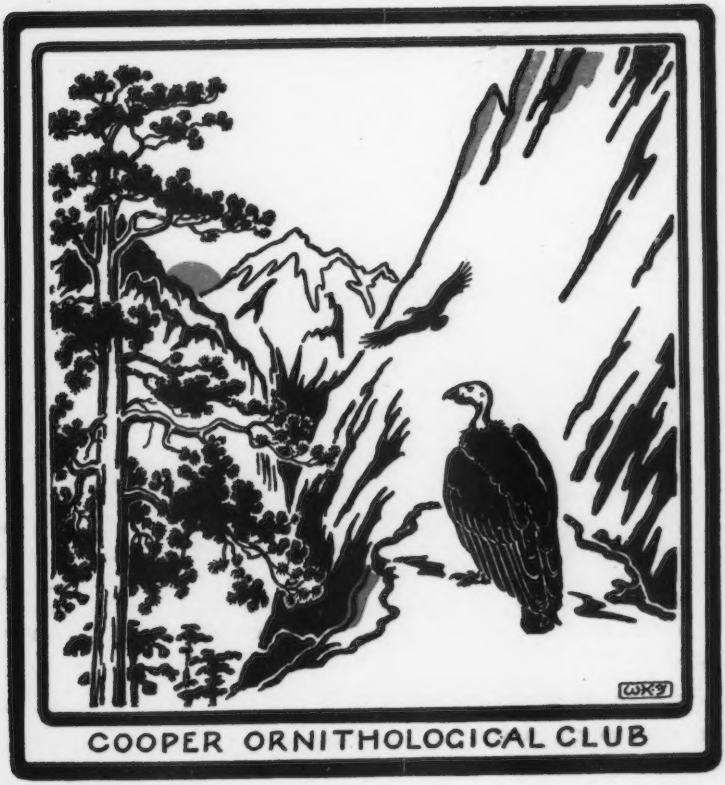

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THE CONDOR

A Magazine of Western Ornithology

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VOLUME XXXVIII NOVEMBER-DECEMBER, 1936 NUMBER 6

CHOICE OF NESTING SITES BY HUMMINGBIRDS

WITH TWO ILLUSTRATIONS

By ROBERT S. WOODS

A number of years ago, while tabulating data on the nesting of the Costa Hummingbird (*Calypte costae*) on my home place, I was impressed by an apparent tendency of the majority of the birds to change the nature of their nesting sites from year to year. Some years this action seemed too concerted to be satisfactorily explained through mere chance or by any conceivable environmental change.

For several years the nests of this species were found most plentifully in an area of about four acres planted to avocados, which were in part interset with guava bushes (*Feijoa sellowiana*). The latter were smaller and less densely foliaged, with smaller leaves and more rigid branches. The following figures will show the yearly shift back and forth between these two types of nesting sites:

	1923	1924	1925	1926	1927
Nests in avocados	1	9	3	2	12
Nests in feijoas	4	2	5	0	0

In 1927 the twelve nests found in this area were not only all in avocado trees, but nearly all were placed near the ends of long, projecting, lower branches of trees of the fuerte variety, of which this type of growth is characteristic. Since that year comparatively few nests have been found, for reasons, perhaps various, which might be guessed at but cannot be stated definitely.

In 1935 and 1936 the Black-chinned Hummingbird (*Archilochus alexandri*), hitherto a spring and late summer migrant in this particular locality, seems in a measure to have taken the place of the Costa as a breeding species, possibly because of the growth of the trees and the increase in verdure in this originally arid district. In the course of a rather thorough inspection of the avocado trees this spring, I discovered the two nests here illustrated, both believed to be of the Black-chinned Hummingbird, and I was struck by the almost exact similarity of the sites chosen. (See figs. 42 and 43.)

The two nests were in avocado trees of the puebla variety, situated 528 feet apart. Both were on slender branches which hung almost vertically downward, a type of growth prevalent in this variety of avocado. In each case the branch was in the northeast quarter of the tree, and the end of the twig curved toward the east, the nest being set in the curve and partly supported by the bases of adjacent leaves. Tree no. 2 is several times as large as no. 1, but nest no. 1 was 56 inches from the ground, and nest no. 2 was 55 inches. The nests themselves were similar, being smoothly and compactly constructed of yellowish plant down, without feathers

Fig. 42. Nest of Black-chinned Hummingbird in avocado tree at Azusa, California. Photographed on June 9, 1936.

in the lining and with little or no attempt at ornamentation of the exterior. Nest no. 1 (fig. 42) was evidently built a few days earlier than no. 2, but some mishap which overtook the eggs in the latter shortly after the hatching of those in the former prevented a more accurate determination.

Subsequently I found another nest about equidistant from the two described, containing young a week farther advanced than those in nest no. 1. Its site differed from the foregoing description only in that the tip of the branch turned toward the north and the nest was only 40 inches from the ground. This nest and its owner appeared typically Costa, but I could not say with certainty that it was not another Black-chinned.

The only other nest found was built earlier in the season, in a site about 80 feet from that of nest no. 1, but unlike that situation in every respect. The nest and its eggs were destroyed, presumably by a jay. If this nest and nest no. 1 were built by the same individual, as seemed probable, it would show that she had no predilection for any one type of nesting site.

While these incidents are not sufficient to serve as a basis for any definite conclusion, it is at least interesting to speculate on the possible causes which might be responsible for an apparent unanimity of choice on the part of several hummingbirds nesting at the same time. The same causes might also account for the

Fig. 43. Nest of Black-chinned Hummingbird in situation similar to that shown in figure 42 and photographed on the same day.

pronounced local fluctuations in number often experienced from year to year, and which, in a bird of such low reproductive capacity, cannot well be attributed solely to the fortunes of the previous year's nesting.

The similarity noted in the nesting sites might be considered mere coincidence, but this would seem rather a severe strain on the laws of chance. Or the birds' instinct might be responsive to subtle changes in external conditions unnoticed by human perceptions. However, it is difficult to imagine what these changing conditions could be, or how they would be met by one rather than another of the various types of nesting site.

Again, these resemblances might be the result of conscious imitation; but on only one occasion have I seen a hummingbird which appeared to be interested in another hummingbird's nest (Condor, vol. 24, 1922, p. 190). The distance between these nests would make this alternative seem unlikely, even if any motive for such imitation could be conceived.

Finally, it is necessary to consider the possibility of the sort of communal thinking which alone seems capable of accounting for some of the simultaneous or cooperative actions of many socially organized animals. Concerning this, of course, little can be said, either of its nature or of its possible utility in the case of nongregarious species; but further study along this line might yield interesting results.

Azusa, California, July 2, 1936.

THE FLAMMULATED SCREECH OWL ON MOUNT PINOS

By LOYE MILLER

So little is known of our tiniest Screech Owl (*Otus flammeolus*) that any contact with the species seems worthy of record. My latest "adventure" was on Mount Pinos, Ventura County, California, on July 24 and 25, 1936. Here, some three hours were spent on three separate occasions in "conversation" with this species, and an adult female was collected in yellow-pine forest near Chula Vista Public Camp Ground of the United States Forest Service. On three previous contacts with the species, in the Chiricahua and Blue mountains of southeastern Arizona, the behavior was so completely identical that one is inclined to believe it typical. On two of the four occasions specimens were collected, which makes identification positive.

The occurrence in the Chiricahua Mountains, Arizona, was at 8200-foot elevation (Barfoot Park) where Apache pine, Chihuahua pine, Gambel oak, and aspen were the dominant trees. The Blue Mountains occurrence was 2000 feet lower, among sparse pine, oak and walnut growth, some few miles above the towns of Clifton and Metcalf. Aridity here made the elevation seem even lower.

The Mount Pinos occurrence was at 7500-foot elevation in typical Transition Zone. All records were made in July, and the Blue Mountains birds had half-grown young on July 5. The Mount Pinos bird had a shriveling brood patch which was being invaded by new feathers. The one nest located was twelve feet from the ground in an overhanging stub of Gambel oak. The entrance, facing downward, had been drilled by a woodpecker but tapped a larger fungus cavity, thus allowing the owls to nest some twenty inches farther back in the stub.

The young were clothed in long, cotton-white down which was being crowded off by the typical gray, cross-barred plumage of young *Otus*. There is no suggestion of rustiness in the plumage of the young. The cottony down of the tarsus is abruptly cut off distally by the bareness of the toes, a character notable in the adults. The "heel" in nestlings is bare. Adults may have a very small bare spot similarly located which scarcely seems the result of wear in the nest hole since the long feathers of the ankle joint are not visibly worn and cover the bare spot pretty closely.

The Mount Pinos bird has the light cross bars on the wing webs noticeably more rufous than the Arizona birds or than a California bird of fresh fall plumage. Otherwise the coloring is closely alike in all four adults. Eye color was so dark as to appear like that of the Spotted Owl or of the Barn Owl; and only once in a total of five or six hours of study of these birds with the electric torch, did I get a glimpse of eyeshine, even though I several times saw the birds fairly distinctly. Parenthetically, I feel that we are inclined to speak too definitely of the color of eyeshine in birds. It varies much, seemingly with the angle of entrance of the beam into the animal's eye. In carnivores I have seen it shift from green to pink and back again, with slight shift of the animal's gaze. In birds it may shift from white to pink. In owls I have seen it either white or pink.

In a Horned Owl studied at twenty feet distance, one eye was noticeably deeper pink than the other and this discrepancy was pointed out at the time to several students in a small group. The eyeshine in *O. flammeolus* on the one occasion when seen was white, and only one eye was visible which suggests that the bird was not looking directly at the light.

Two different vocal notes were produced by the birds and a third one could

surely have been given by no other species. One of these notes would correspond to a song, one I would interpret as sharp alarm, and the third is more of a worry note. The "song" consists of two short notes and a pause of about equal length, repeated *ad libitum*. The quality is typical of the whistle of Screech Owls and the pitch slightly lower than that of the Pigmy Owl. This note was heard in the vicinity of the nest tree above Clifton at 2:30 a.m., but ceased soon after I had assembled enough clothing to start an investigation. It then gave place to the "worry call" as I prospected the vicinity of the nest. The "worry call" is a peculiar hoarse whistle difficult to approximate with the human apparatus, is pitched higher in the female, and is most confusingly ventriloquistic, sometimes dropping to a scarcely audible whisper at a distance of eight or ten feet. Regarding this note, my journal runs as follows: "With this squawk deeply impressed on my memory from two hours' work with these birds, I was startled next day in broad daylight on the street in Springerville by almost the identical note. It came from a very small infant in arms in a car parked at the curb."

This "worry call" was consistently used by the Mount Pinos bird, although there was no discoverable nest in the vicinity. I am confident that the "worry" was a real one caused by the imitated notes of Spotted Owl or of Horned Owl. These larger owls not infrequently prey upon their smaller relatives of various species, and *flammeolus* is probably an easy victim.

The sharp alarm note was heard only in the Mount Pinos contact, and it was unquestionably given by the same bird as gave the "worry" call. It is a peculiar, sharp, short, cat-like "yeow" which is often followed by the "worry" call. In fact, while the "worry" call was being given at intervals of several seconds, the alarm call could be stimulated by a Spotted Owl hoot. After about an hour, the little chap ceased to react to a Spotted Owl note, so I gave the Horned Owl's note, with immediate results—the alarm note came back with startling suddenness.

After all, a profound and prolonged silence is probably the most characteristic "vocal" attribute of the species.

In handling these little owls, one is constantly impressed by their frailty. Not alone are they of tiny size generally, but their bony framework is most fragile.

Except for the femur, the leg bones are longer than in the Pigmy Owl (*Glaucidium gnoma*), but are noticeably smaller in their transverse diameters. The femur is smaller in all dimensions, the tibia is slightly longer, but much smaller in all its other axes, the tarsus is much longer but scarcely half as broad. These characteristics of the lower limb all point to a degeneracy of the predatory habit so far as vertebrate prey is concerned, hence I was not surprised that the stomach contained only insects. The sternum is slightly broader, much flatter, and with a much less developed carina. The coracoid is shorter, weaker, with narrower head and base, and less pronounced muscle scars. The humerus is longer, relatively weaker and very much straighter than in the Pigmy Owl. All these characters indicate less speed or versatility in flight. The differences are quite comparable to those between a Prairie Falcon and a Swainson Hawk and are again doubtless correlated with a weakening of the predatory habit.

In a former note on the Pleistocene occurrence of *O. flammeolus* (San Diego Soc. Nat. Hist., vol. 7, 1933, pp. 209-210) attention was called to the close approximation in size of the tarsus to that of *Micropallas*, and the present increased amount of study material of both species strengthens the points there made. We are dealing with an elfin screech owl, of timid and retiring habit and with a notably reduced predatory ability.

University of California at Los Angeles, September 15, 1936.

A WADER MIGRATION AT TLELL, QUEEN CHARLOTTE ISLANDS, BRITISH COLUMBIA

WITH THREE ILLUSTRATIONS

By J. A. MUNRO

While at Tlell, on the east coast of Graham Island, during the period April 29 to May 30, 1935, I had an opportunity to conduct daily observations on a wader migration. The flight probably had been under way for some days prior to my arrival, and it reached the peak shortly afterward. It terminated so far as most species were concerned on May 11, after which only Sanderlings (*Crocethia alba*) were abundant.

The chief feeding ground for waders was an expanse of boulder-strewn sea-bottom interspersed with areas of clear sand or of shingle, part of which was always available except at extreme high tide when the reef was completely submerged. Some of these boulders were encrusted with barnacles, others with gastropods, chiefly *Littorina scutulata*. Limpets clung to their sides and the spaces between harbored various other species of molluscs. The overturning of a stone usually dislodged little crabs, isopods or other small animals, and a high-water mark deposit of drifted eel-grass held still others including amphipods in abundance—in short, it was a rich feeding ground not only for waders but also for gulls, bald eagles, crows and ravens.

Here on the evening of April 29, with all save several small parts of the reef covered by the rising tide, a large company of waders, chiefly Black Turnstones (*Arenaria melanocephala*), but including also Aleutian Sandpipers (*Arquatella ptilocnemis couesi*), Western Sandpipers (*Ereunetes mauri*), Sanderlings, Dowitchers (*Limnodromus griseus*) and Red-backed Sandpipers (*Pelidna alpina sakhalina*) was assembled. As I approached, the birds arose and flew along the beach, now in small bands, now together, the black and flashing white of the Black Turnstones predominating as the flock wheeled and settled again along the seaward margin of stones. Here they clustered close together in a compact mass which a moment later commenced to disintegrate and flow over the reef in a dark-colored stream. From the slight elevation on which I stood, the birds' backs were visible but their fast moving feet could not be seen, so that an illusion of movement without effort was created.

Subsequently it was observed that the greatest activity took place during the period in which the size of the feeding ground was steadily increasing on a falling tide. Thus on the afternoon of May 3 large numbers of waders were busily feeding over the reef which momentarily was growing larger. Small flocks were restlessly flying from place to place and others constantly were arriving, sometimes in flocks of considerable size, so that it was not practicable to make accurate counts. As before, Black Turnstones were greatly in the majority, and the other species among them, relatively less conspicuous against a neutral background of boulders, sometimes were difficult to distinguish.

The feeding ground of the Black Turnstones was entirely restricted to the stony sea bottom described, and usually their hunting was done close to the constantly shifting water's edge. Beyond the seaward edge of this reef isolated boulders of considerable size appeared at low tide and these were eagerly searched for food. Frequently fifty or more birds might be seen walking over these larger rocks, which were separated from the main feeding ground by a stretch of open water.

When this reef was covered, the birds rested on the beach in a compact flock or else flew restlessly up and down the shore. Thus on May 4 a large flock came whirling down the beach, wheeled and alighted out of sight behind a slight elevation near the water's edge. Walking slowly toward them, I was able to approach within thirty-five yards. The Turnstones were assembled in a densely packed flock, and on the landward edge of this gathering were clustered some 200 Aleutian Sandpipers and 100 Sanderlings.

These birds were kept under observation for three-quarters of an hour. The feeding ground was entirely under water and the birds were more than usually restless, taking sudden flights from one part of the beach to another. Sometimes the entire company would rise suddenly and travel out to sea, first in a dense cloud, then in a long straggling line, finally to re-assemble on the same place which had been vacated a few minutes before. When in flight the smaller waders (the Aleutians and Sanderlings) were sometimes hard to detect among the Black Turnstones; but

Fig. 44. Mass of Black Turnstones in oval-shaped flock, at Graham Island, British Columbia.

immediately after landing on the beach the former invariably ran through the mass of Turnstones and took up a position at the inner edge of the flock, the Aleutian Sandpipers strung out between the Black Turnstones and the Sanderlings.

Sometimes the Black Turnstones would crowd together so closely on the beach as to present at a distance the illusion of a large, oval, black object lying on the white sand (see fig. 44). Approaching this flock when in such formation, as I did a number of times, I saw that the Black Turnstones became restless first. The black oval of the flock began to lengthen, as first a trickle then a stream of birds from among those at the part of the flock farthest from me moved along the sea edge, until finally the oval lengthened to a long, black ribbon and a moment later the birds arose, the Black Turnstones a little ahead of the others. Again the flock flew out to sea, swinging, turning, and again alighted on the sand, with the smaller sandpipers always taking up a position at the inward edge. These periodic shiftings stopped when a young Duck Hawk suddenly appeared, put the birds off the beach and stooped into the wheeling mass, whereupon the flock quickly dissolved into smaller bands which sped out to sea and vanished.

It was not possible to determine what proportion of the daily numbers seen

were fresh arrivals or for how long individual birds remained in the vicinity; but it seems reasonable to suppose that between two and three thousand birds passed through. On May 3 after a strong southeast wind on the preceding night practically all the waders previously noted were absent from the beach and it was assumed that flocks arriving subsequently were newcomers.

DAILY ESTIMATE OF WADERS AT TLELL, BRITISH COLUMBIA, APRIL 29 TO MAY 16, 1935

	April		May															
Day of month	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Total number	915	1662	1257	1134	280	1123	34	247	71	28	530	476	92	4	6	21	111	22
Species:																		
Semipalmated Plover	0	1	6	6	.....	20	....	10	0	6	18	....	2	2	....	2	....	2
Black-bellied Plover	5	0	0	15	0	1	7	0	0	0	7	9	0	0	0	0	0	0
Black Turnstone	500	800	700	900	0	1000	0	150	0	1	85	150	50	0	0	0	0	0
Hudsonian Curlew	0	0	0	2	0	1	0	0	0	1	0	0	0	0	0	0	0	5
Greater Yellow-legs	0	1	....	....	1	1	....	....	6	....	8	4	....	2	6	....	....	....
Aleutian Sandpiper	50	50	200	150	200	0	0	40	0	20	82	40	40	0	0	0	1	0
Least Sandpiper	0	400	0	0	0	0	0	7	10	0	30	30	0	0	0	0	0	0
Red-backed Sandpiper	40	300	350	3	0	0	0	4	40	0	230	200	0	0	0	0	10	3
Western Dowitcher	60	24	0	35	4	0	19	0	5	0	10	16	0	0	0	0	0	0
Western Sandpiper	210	50	0	0	0	0	0	35	10	0	30	25	0	0	0	0	0	0
Sanderling	50	35	0	20	75	100	8	0	0	0	30	0	0	0	0	19	100	12
Killdeer	1 observed April 30.																	
Ruddy Turnstone	2 observed May 2; 2 observed May 10.																	
Wilson Snipe	1 observed May 1.																	
Wandering Tattler	1 observed May 6.																	
American Knot	1 observed May 2.																	

The large flocks of Black Turnstones, Aleutian Sandpipers and Sanderlings always were carefully scrutinized on the chance that other less common waders might be among them, and this resulted in one record for an American Knot (*Calidris canutus rufus*) and two occurrences of Ruddy Turnstone (*Arenaria interpres morinella*).

A dead Red Phalarope (*Phalaropus fulicarius*) picked up on the beach constituted the only record of this species. On its ventral surface the specimen shows a few reddish feathers of the summer plumage.

Several miles of hard sand beach lie between the reef and the mouth of the Tlell River to the north, and at the height of the migration small flocks of Sanderling, Western Sandpiper, Western Dowitcher and Black-bellied Plover (*Squatarola squatarola*) were met there. Occasionally a Hudsonian Curlew (*Phaeopus hudsonicus*) flying north up the beach would alight near the water's edge attracted by other waders; but a log-strewn slope of soft sand above high-water mark seemed more attractive to this species and this was also the haunt of the Semipalmated Plover (*Charadrius semipalmatus*). (See fig. 45.)

On May 4, I watched a male of the last named species perform the mating flight, as with short bat-like wing beats the bird continued to fly along an elliptical course, at varying heights above the ground, for six minutes. Sometimes the performer would be a hundred feet in the air and continue to fly at this altitude for a short time, then, like a falling leaf, flutter down to a lower elevation. A single note, repeated at regular intervals of about five seconds—syllabized as *weet, weet, weet*—was given during the entire flight. Finally, from a high elevation the bird dropped in a slanting course to the sand and alighting there continued to call for several minutes. On this same day other Semipalmated Plover, in two's and three's, constantly crossed the beach and circled in and out among the logs, such movements being interpreted as part of the courtship display.

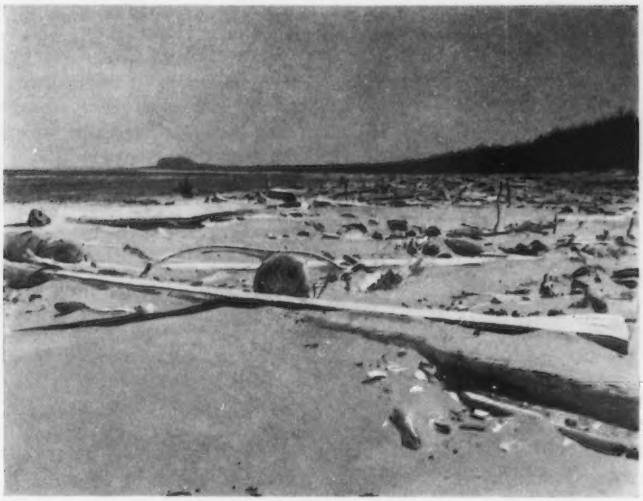

Fig. 45. The upper beach, frequented by Hudsonian Curlew and Semipalmated Plover, at Graham Island, British Columbia.

Second in importance as a feeding ground were the tide flats three miles from the mouth of the Tlell River which runs parallel with the sea at only a short distance inland (see fig. 46). Here with a falling tide appeared expanses of soft mud in which were many small polychaetes and, on the surface, an abundance of amphipods, while many of the shallow tidal pools held newly hatched sculpins (*Lep-*

Fig. 46. Tide flat on Tlell River, Graham Island, British Columbia, showing a feeding flock of Red-backed Sandpipers.

tocottus armatus) in large numbers. These semi-transparent fry, less than an inch long, were eaten by several species of waders. Other parts of the riverside, comprising stretches of clay, sand or gravel and producing less animal life, were not used to any extent except by Greater Yellow-legs (*Totanus melanoleucus*) and the scarce Wandering Tattler (*Heteroscelus incanus*). The most abundant species were Red-backed Sandpiper, Least Sandpiper (*Pisobia minutilla*) and Western Sandpiper. This area, more than any other, was frequented by Western Dowitchers, and these were the tamest of all the waders so that it was usually possible to walk within a few yards of where they stood before an alarm was given. One or more Greater Yellow-legs were seen here frequently, and at least two of these remained after the migration was over.

Food.—Analyses of the stomach contents of waders taken at Tlell showed that Black Turnstones had fed exclusively on barnacles and gastropods, which also were the chief food of Aleutian Sandpipers plus a small number of limpets, blue mussels, amphipods and a small nereid. The food of Sanderlings was entirely crustacean, comprising amphipods, isopods and mysids. Sculpin fry had been eaten by a Greater Yellow-legs, a Wandering Tattler and two Western Dowitchers. The food of Red-backed Sandpipers was the amphipod *Corophium spinicorne* exclusively, except in one instance where a small polychaete had been eaten. A Hudsonian Curlew had fed upon amphipods and a shore crab (*Hemigrapsus* sp.); a Semipalmated upon ground beetles and an amphipod, and a Least Sandpiper on larvae of Diptera and Coleoptera. The material found in Western Dowitchers comprised gastropods, polychaetes, sculpin fry and larvae of Diptera and Coleoptera. A Black-bellied Plover had taken 8 small clams (*Macoma* sp.), gastropods, amphipods, 1 mysid, 2 isopods and a small fish.

Thanks are extended to Dr. W. A. Clemens, Director, Pacific Biological Station, Nanaimo, B. C., for co-operation in the stomach analyses summarized above.

Okanagan Landing, British Columbia, March 6, 1936.

CHARLES EDWARD HOWARD AIKEN

WITH PORTRAIT

By EDWARD R. WARREN

Charles Edward Howard Aiken, who may well be termed Colorado's pioneer ornithologist, was born at Benson, Vermont, September 7, 1850, the son of James E. and Harriet Ann (Howard) Aiken, and died at Colorado Springs, Colorado, January 15, 1936. There were seven children in the family; two died in infancy. Charles was the oldest of the surviving children, and had four sisters, three of whom are now living. The boyhood years were spent in Chicago, to which place the family had moved. Here Charles began, in 1868, the study and collection of birds, which he continued to the end. He once told me that he used to shoot warblers and other small birds which he sold in the flesh to a Chicago taxidermist. Perhaps he gained his first knowledge of taxidermy from that man.

The following note was found among Aiken's papers. It is interesting as showing that he was acquainted with the now extinct Passenger Pigeon (*Ectopistes migratorius*). It was probably written within the last few years. Ross is in Indiana, southeasterly from Chicago, and is still a small place, 125 being the population as given in the Century Atlas. There are seven skins of the Passenger Pigeon in the

Colorado College collection, bought alive in the Chicago market, spring of 1886, and probably trapped in Wisconsin or Michigan.

"In the summer of 1868, I went to the little town of Ross with my friend Foss to shoot pigeons. We found a flock of about 60 birds in a patch of timber bordering a stubble field and shot several. These birds were still plentiful at that time. The last passenger pigeon I saw at large was in 1886, near Hammond, Indiana. It was a single bird, rather wild. I shot at it, but failed to kill."

Aiken came to Colorado Springs, October 25, 1871, after his father's business was destroyed in the Chicago fire. He spent the winter of 1871-1872 on a ranch on Turkey Creek, some eighteen miles southwest from Colorado Springs, which his father had purchased, and at once began the collecting of birds here. Very many, if not most, of the birds were new to him, and we can imagine with what enthusiasm he roamed those piñon-covered hills, looking for birds. After the spring of 1872, his residence at the ranch was intermittent, varied by excursions to different places. The localities given on the labels of the skins give us a clue to some of his wanderings.

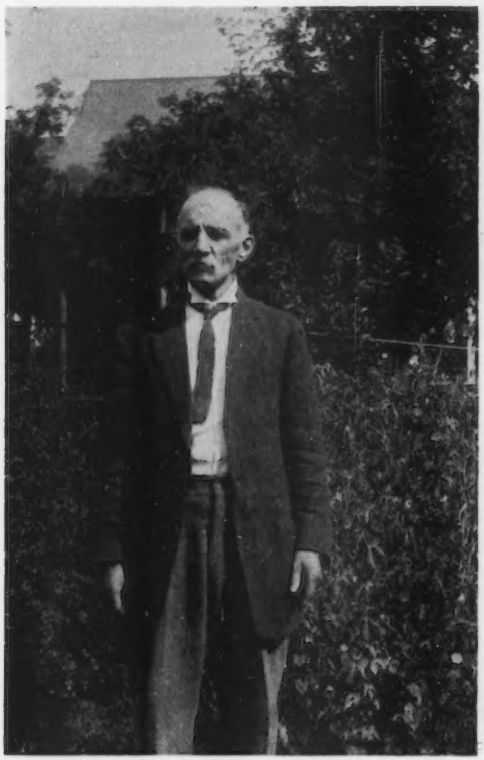

Fig. 47. Charles Edward Howard Aiken in the garden of his home at Colorado Springs, Colorado. Photographed in the summer of 1915, by Dr. W. W. Arnold.

The last of June, 1872, he seems to have made a short trip to southern Colorado, to Las Animas County. Returning, he appears to have been at the ranch a short time, and then off once more, about July 26, to Cañon City, up Currant Creek into the South Park. I think he traveled on horseback, and perhaps had a pack animal. About August 8, he crossed to Lake County, which then covered a much larger area than it does today. During August he was at various places in the upper part of the Arkansas Valley, collecting. Early in September he turned his steps homeward and was home before the 11th. In a letter written to his family soon after his return he speaks of traveling over 100 miles in seven weeks and collecting 160 birds, also seeing much big game. I suppose that by 100 miles he meant that distance from home, for it is more than that distance to the extreme end of his journey; as a matter of fact, I think his total mileage must have been close to 300.

Specimen labels indicate that he was in the home region part, at least, of the season of 1873. The summer of 1874 he was naturalist with the Wheeler Survey in the southern Colorado mountains, where he did good work and collected some 400 specimens, which presumably went to Washington, as the Survey was headed by Lieut. G. M. Wheeler of the U. S. Army Engineer Corps. The following summer, 1875, he went to the San Luis Lakes, in the San Luis Valley, Colorado, collecting water birds and other birds, many of which are still in the collection.

In 1876 Aiken made his longest expedition, that to Arizona. This was made with a wagon, which carried his outfit, and a saddle pony led behind the wagon. Mules furnished the motive power of the wagon. Aiken had a dog which was stolen by an Indian somewhere in Arizona. I once asked him if the Apaches troubled him, and he said they were quiet that summer and stayed on the reservation.

Aiken started on this Arizona trip May 8, 1876, going south along the foothills of Colorado and crossing the Raton Pass into New Mexico. Apparently he did little collecting in New Mexico, and was in Arizona June 26, remaining there until at least October 10; he probably started for home then or very soon after, for he was at Santa Fe on November 3, collected a Cañon Towhee (*Pipilo fuscus mesoleucus*) at Apishapa, Las Animas County, Colorado, November 22, and doubtless was home for Thanksgiving. Most of his collecting in Arizona appears to have been done near Fort Apache and in the White Mountains.

The following is quoted from a letter from H. W. Henshaw to Ruthven Deane, dated June 24, 1876, and is in E. W. Nelson's account of Henshaw, printed in the Auk, vol. 49, 1932, p. 413.

" 'Aiken writes me from way down in New Mexico. He had had up to that time but little success and something like a hard time. His mules had but two drinks in three days. Was accompanied by only a small boy as assistant. Had joined an emigrant company, the one which started from Boston for Arizona. Fear he will not meet with the haul I anticipated. He may, however, strike it rich down in Arizona if he don't meet with hostile Apaches. Then Allah preserve him. He is a plucky chap. Knowing that country as I do I wish I were with him.' "

The catalogue shows that he collected more or less during 1877 and 1878, though engaged in business those years. In May, 1878, he made a trip to Horse Creek, some 75 miles east of Colorado Springs. I copied the account he wrote in his notebook; this does not say who were his companions. The party left the afternoon of May 11 and reached its destination on the 15th. He says bird life was scarce, I presume as to number of species, for there seem to have been plenty of individuals. He mentions Skylarks (Horned Larks), Grass Finches (Vesper Sparrows), Meadowlarks, White-winged Blackbirds (Lark Buntings), these in large flocks. Mountain Plover were not seen the first 15 miles but became common as

they proceeded eastward. Small flocks of Brewer Blackbirds haunted all the ranches. Pond Creek and Horse Creek were each the home of two or three pairs of White-necked Ravens. Other species were observed wherever there were trees or bushes. Along Horse Creek were water holes and marshy places, where shore birds of several species were seen.

In 1874 he opened a workshop close to his residence, and was busy mounting deer and other game heads brought in by eastern hunters. I think he always conducted a taxidermist shop as well as other business, and he often had two or more assistants. In 1893 he went to Salt Lake and engaged in the real estate business. This venture not being as successful as it might have been, he returned to Colorado Springs. For several years afterward he conducted a taxidermist and curio business, also doing fur work. Later he abandoned the curio business. From 1897 to 1899, he did much collecting in the region about Colorado Springs.

In 1906, William Lutley Sclater, the English ornithologist, a brother-in-law of General Wm. J. Palmer, came to Colorado Springs as Director of the Museum of Colorado College. In February, 1907, he arranged for the purchase of Aiken's collection of birds for the College, General Palmer supplying the funds. Sclater arranged, labeled and catalogued the skins, which are now in safe cases at the College. When the collection was taken over, there were about 4700 specimens, and at the time of Aiken's death this number had been augmented by the addition of about another thousand specimens. Besides the skins there is also a mounted collection of Colorado birds, representing many of the species.

Immediately after the sale of the collection Aiken began another, and his serial numbers reach some 1300, but these include a good many mounted birds which went into the Colorado College Collection in final fulfillment of his contract. Since his death Colorado College has acquired these specimens and a considerable number of eggs and nests.

In 1908 he went to the White River with a hunting party but did no bird collecting. In June, 1909, I went in a wagon to the San Luis Valley on a collecting trip, and Aiken accompanied me for a few days, as far as Cañon City, where he took a train for home. It was a pleasant time, at least for me, and I think for him, for we went through the country he had known so well during his first years in Colorado.

As a taxidermist Aiken excelled in the mounting of birds, especially the smaller species, and his bird skins are models of that sort of work. The above-mentioned mounted collection is mostly his work, though some of the birds were done by a taxidermist in his employ and a few were obtained from other sources. He once showed me some drawings he had made of birds, I think when he lived in Chicago. I could not help thinking it was to be regretted he had not continued that work, for it showed promise.

His hearing was keen, and he could not only recognize the notes of birds when heard, but could imitate them closely by whistling. He was well acquainted with the habits of birds and various other animals. He had a sharp eye for the variations in plumage and other characteristics of birds. He firmly believed all recognizable variations should have a name. He was much interested in the juncos and acquired a large series, which includes most, if not all, the subspecies. Those locally collected are mostly our winter visitants. One of our winter birds was named for him, *Junco aikeni*, whose summer home is in the Black Hills of South Dakota.

Of late years Great Horned Owls had greatly interested him. Many specimens were brought to him for mounting, all taken somewhere in the region about Colorado Springs, and these showed much variation in color and markings. Most of

them are winter birds, which may partly account for this variation, for some may have drifted here from other localities in a migratory movement.

Aiken knew many noted American ornithologists, by correspondence if not by personal meeting. With whom the list of these acquaintances begins I do not know, possibly with Henry W. Henshaw, who corresponded and exchanged with Aiken before the latter left Chicago and who visited him at the ranch in the fall of 1873. Robert Ridgway was a correspondent after the removal to Colorado, perhaps before. Letters were exchanged with Professor S. F. Baird.

Ridgway was born in 1850, a few months before Aiken; and Henry K. Coale, another ornithologist, was born that same year. Aiken was the last of the trio. I recall that one Sunday afternoon he telephoned me that Coale was in town, and he asked me to come to Palmer Hall, Colorado College, where the collections were, and to let them in and show the birds. We had an enjoyable time looking over the collections.

The spring of 1882, J. A. Allen and William Brewster were in Colorado Springs for the former's health, Brewster having come to keep him company. Aiken saw much of the two. I did not, for I went into the mountains shortly after their arrival. I had, however, been on a cruise to the Gulf of St. Lawrence when Brewster was a member of the party, and so I felt well acquainted with him.

E. W. Nelson visited Colorado Springs, and spent some little time here. Dr. Elliott Coues was here at least once. One day Aiken showed me a skin of Audubon Warbler collected by Coues at Fort Whipple, Arizona, in the eighteen-sixties, which had been obtained by exchange from the Smithsonian. When here, Coues wrote on the label "bad bird." Aiken exchanged with Major C. E. Bendire, some of whose skins are in the collection.

Some time, probably, in 1874, Frank Stephens and his wife reached Colorado Springs, traveling by wagon, and spent the winter of 1874-1875 here. Aiken taught Stephens to make bird skins, and offered to buy all he collected, which he did for several years. Many of these skins are in the collection. Stephens left Colorado Springs in March, 1875, and traveled down through the San Luis Valley into New Mexico, and to Arizona, finally reaching California.

Aiken was a charter member of the El Paso Club, the first social club to be organized in Colorado Springs, and was also a member of the volunteer fire department. He joined the A. O. U. in 1898, but after some years permitted his membership to lapse. In 1926, after his 76th birthday, he was made an Honorary Life Associate at the Annual Meeting of the A. O. U., an honor which pleased him very much and which he greatly appreciated.

In personal appearance Aiken was of a rather slight build, perhaps a little less than 5½ feet tall; wiry might perhaps describe him. As I knew him, he always had a mustache. His manner was always genial and courteous. I had more than one discussion with him on various matters, mostly about birds, but there was never any hard feeling; we respected each other's opinions, even if we did not always agree. While his real interest was always in birds, he was also interested in flowers, and took much pleasure in the garden at his home. At one time the breeding of pointer dogs took much of his attention; but he gave this up, as it was impossible to carry it on and look after his other business.

In conclusion I must acknowledge my indebtedness to Aiken's sisters, Miss Jessie M. Aiken and Mrs. Fanny Aiken Tucker, for notes and information which they have kindly furnished me. They also read a first draft of this paper and made certain suggestions.

Colorado Springs, Colorado, May 15, 1936.

A NEW RACE OF GOLDEN-CROWNED KINGLET FROM ARIZONA

WITH TWO ILLUSTRATIONS

By RANDOLPH JENKS

The Golden-crowned Kinglet has been known as a breeding bird in Arizona since July, 1933 (Jenks, Condor, vol. 36, 1934, p. 175). While that record was made under the name of *Regulus satrapa olivaceus*, it now appears that the Arizona birds are not true *olivaceus*.

I have collected Golden-crowned Kinglets in Apache County, central-eastern Arizona, within the past two years, as part of a faunal survey in this territory. I am indebted to Messrs. Edouard C. Jacot, James O. Stevenson, Hustace H. Poor, and Frank G. Watson for assisting in this work and for collecting some of the kinglets. These specimens are in the Randolph Jenks Collections at the Museum of Vertebrate Zoology, the Arizona State Museum, and the Museum of Northern Arizona. Through the advice and personal assistance of Dr. Joseph Grinnell I have been able to compare these Arizona kinglets with series from other parts of North America. Through the cooperation of Mr. E. R. Blake of the Field Museum and Messrs. E. T. Gilliard and J. T. Zimmer of the American Museum of Natural History, I have been able to compare the Arizona birds with series from Guatemala and Mexico. I am also indebted to Dr. A. H. Miller, Dr. J. M. Linsdale and Mr. W. H. Behle of the Museum of Vertebrate Zoology, and Mr. A. R. Phillips of the Museum of Northern Arizona for various suggestions.

The type of *olivaceus* came from Simiahmoo, Washington (Baird, Review Amer. Birds, 1864, pp. 65-66). The principal characters setting it apart from the eastern form, *satrapa*, are its brighter, more olivaceus, coloration above, shorter wing and tail, and more slender bill. Besides these differences, its underparts are tinged with brownish buff, and the yellow and especially the orange of the head are more intense.

Arizona birds and *olivaceus* differ just as strikingly from one another as the latter does from *satrapa*. Also, the Arizona birds are not intermediate between *satrapa* and *olivaceus*, but show characters different from each. Because these birds are, on the whole, more like *olivaceus*, and because of the geographical proximity, I have made primary comparisons with the latter.

From the series of 19 Golden-crowned Kinglets at hand from the White Mountains of central-eastern Arizona I have selected a summer specimen as the type, despite its being in worn plumage, because I am thereby reasonably certain that it is from the breeding population there, and not a migrant from the northeast or northwest.

Regulus regulus apache, new subspecies. Arizona Golden-crowned Kinglet.

Type.—No. 67962, male adult, Museum of Vertebrate Zoology (Randolph Jenks Collection); collected on McKay Peak, White Mountains, 8 miles southeast of McNary, Apache County, Arizona, at 9100 feet altitude, by Randolph Jenks, August 16, 1935. Prepared by E. C. Jacot. (Named for the Apache Indians, from whose country it comes.)

Subspecific characters: *The average adult male, spring and summer plumage.*—Similar to *R. r. olivaceus*, but having bill and wing decidedly longer, and tarsus, middle toe, and tail averaging slightly longer; bill averaging more slender and more tapering; single pair of nasal plumes characteristic of *Regulus regulus* averaging smaller and less conspicuous; median area of pileum not cadmium orange as in *olivaceus*, but averaging between orange chrome and flame scarlet (names of colors based on Ridgway, Color Standards and Color Nomenclature, 1912), some specimens exhibiting a rich flame scarlet; black anterior and lateral boundary of pileum not so jet black as in *olivaceus* or *satrapa*; intermediate yellow band wax yellow or lemon chrome. Pig-

mentation averages less deep than in *olivaceus*, the bird being lighter in coloration. Upperparts average distinctly lighter gray and lighter olive, gray of nape and hind neck approaching light olive gray and extending posteriorly as far as interscapulum (which in some specimens it overlaps), then blending from grayish olive on back to greenish olive on lower back, rump, and upper tail coverts, of lighter tone than in *olivaceus*. In series, these birds give appearance of having wide dorsal olive gray to light olive gray nuchal band covering nape and hindneck, noticeably more exaggerated and more distinct than in *olivaceus*. Ocular and malar areas similar to hindneck, gray averaging lighter than in *olivaceus*. Partly concealed pale yellow band crossing secondaries near bases and exposed dusky band succeeding it, not so distinct as in *satrapa*. Underparts smoke gray to pale smoke gray on abdomen and under tail coverts, and not tinged with as much or as dark brownish buff as in *olivaceus*, but approaching in this respect condition found in *satrapa*.

Average measurements of adult male.—Exposed culmen 8.9; bill from nostril 6.6; length of gonys 5.6; wing 57.4; tail 44.6; tarsus 16.3; middle toe 8.3. (Measurements in millimeters of 8 adult males.)

Measurements of type specimen (with deviations from average, + above, − below, average). Exposed culmen 9.2+.3; bill from nostril 7.0+.4; length of gonys 6.0+.4; wing 57.8+.4; tail 44.0−.6; tarsus 15.0−1.3; middle toe 8.4+.1; nasal plumes 2.2×.8 (average).

Adult male, autumn and winter plumage.—Similar to male of spring and summer plumage, but a little more brightly colored; upperparts from interscapulum to rump more olivaceus but not so dark on average as *olivaceus*, comparing favorably in this respect with *satrapa*. Gray of nape and hind neck similar to spring and summer plumage, still showing wide dorsal nuchal band. Underparts slightly more suffused with pale buffy olive as in *satrapa*, but not tinged with brownish buff as in *olivaceus*.

Adult female.—Similar to male in subspecific characters of color. Center of pileum entirely yellow (wax yellow to lemon chrome); whether there be racial variation in color tone of pileum is not shown in the limited material at hand.

Average measurements of adult female.—Exposed culmen 9.0; bill from nostril 6.3; length of gonys 5.0; wing 55.2; tail 44.1; tarsus 16.1; middle toe 8.6. (Measurements in millimeters of 5 adult females.)

TABLE I

Measurements of adult male *Regulus regulus* in millimeters

Region	No.	Bill	Wing	Tail	Tarsus
White Mts., Arizona	8	6.6 (5.8-7.1)	57.4 (56.5-59.1)	44.6 (43.5-46.1)	16.3 (14.9-17.5)
San Francisco Mtn., Arizona	1	6.2	57.5	44.3	16.4
Utah, Idaho, Nevada	7	5.8 (5.3-6.1)	55.4 (54.5-56.7)	43.5 (42.2-46.0)	15.5 (14.2-16.0)
Coastal belt, California	20	5.5 (5.0-6.5)	54.2 (52.3-55.8)	42.3 (41.0-43.5)	14.9 (14.0-17.2)
Coastal belt, Alaska	18	5.9 (5.4-6.3)	54.3 (52.4-55-9)	42.8 (40.0-44.1)	15.0 (14.1-16.6)
Guatemala	6	5.8 (5.3-6.0)	55.3 (54.4-56.5)	40.5 (40.0-42.0)	15.7 (15.0-16.0)
Central Mexico (Mexico City and Hidalgo)	2	6.0 (6.0-6.0)	54.5 (54.0-55.0)	41.3 (41.0-41.5)	15.4 (15.0-15.8)
Western Mexico (Jalisco)	4	5.7 (5.3-6.0)	55.4 (54.5-56.2)	41.6 (40.5-43.0)	15.6 (15.0-16.0)
Eastern U. S. (Mich., Wash., D. C., Maine)	6	5.0 (4.9-5.2)	56.9 (56.1-57.8)	44.9 (44.2-45.7)	15.0 (14.4-15.6)

Numbers outside of parentheses indicate averages; those within, extremes. Bill measurements were taken from anterior margin of nostril to tip; wing measurements were taken without straightening the primaries artificially; both wings of each individual were measured and averaged.

Other measurable characters.—The exposed culmen and length of gonys were also measured and found to be closely correlated with length of bill from nostril, but the individual variation was found to be greater for these measurements. The middle toe showed extreme individual variation and was difficult to measure.

Comparisons.—The following table summarizes at a glance the comparison between the four races of New World Golden-crowned Kinglets.

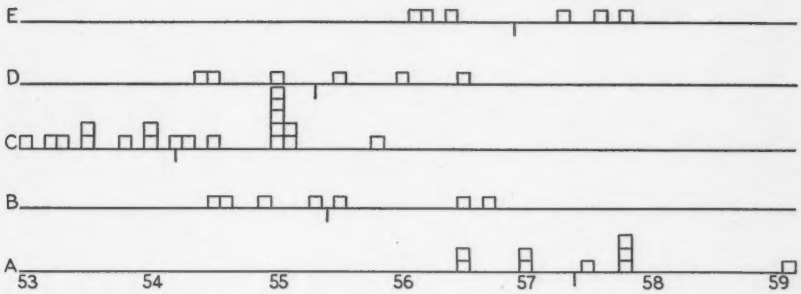

Fig. 48. Wing lengths (in millimeters) of adult male Golden-crowned Kinglets. Each square represents a single bird; averages are indicated by short perpendicular lines. Localities represented are as follows: A, Arizona; B, Nevada, Utah, and Idaho; C, California; D, Guatemala; E, eastern states (Michigan, Washington, D. C., and Maine).

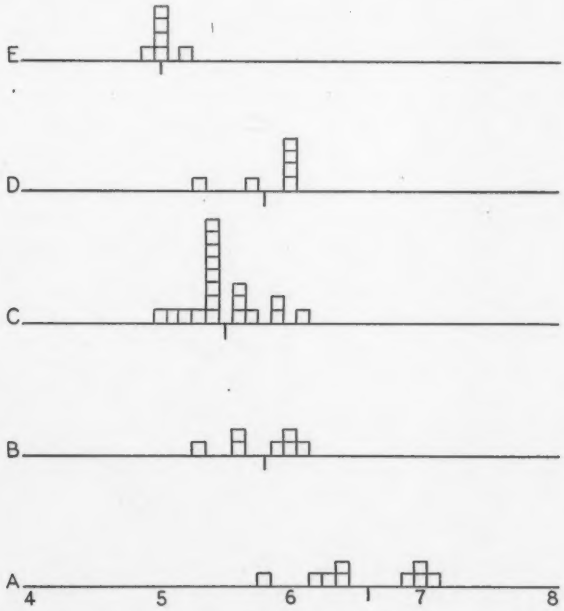

Fig. 49. Length of bill from nostril of adult male Golden-crowned Kinglets. See figure 48 for localities represented.

TABLE 2

R. r. satrapa	*R. r. apache*	*R. r. olivaceus*	*R. r. clarus*
grayer coloration above than *olivaceus*	grayer coloration above than *olivaceus;* olive gray dorsal nuchal band	more olivaceus coloration above, olive of upperparts brighter and more greenish than *satrapa*	olive green of upper parts distinctly brighter green than *olivaceus;* anteriorly olive green extends over shoulders, reducing gray nuchal band
underparts lighter and less tinged with brownish buff than *olivaceus*	underparts lighter and less tinged with brownish buff than *olivaceus*	underparts slightly darker and tinged with more brownish buff than *satrapa* or *apache*	underparts similar to *olivaceus,* but with slightly less brownish buff tinge
wing and tail decidedly longer than *olivaceus*	wing and tail decidedly longer than *olivaceus,* slightly longer than *satrapa*	wing and tail decidedly shorter than *satrapa* or *apache*	wing as long as or slightly longer than *olivaceus;* tail slightly shorter than *olivaceus*
bill stouter than *olivaceus;* stouter and shorter than *apache*	bill more slender and longer than *olivaceus* or *satrapa*	bill more slender than *satrapa,* but shorter, less slender, and less tapering than *apache*	bill similar to *olivaceus*
crown less rich orange than *olivaceus*	crown richer (orange chrome to flame scarlet) than *olivaceus*	crown richer (cadmium orange) than *satrapa* but not so rich as *apache*	crown similar to *apache*
side of head lighter than *olivaceus*	side of head lighter than *olivaceus*	side of head darker than *olivaceus* or *apache*	side of head darker than *olivaceus*

Interpretations.—As may be seen by table 1, the single specimen from San Francisco Mountain (M. V. Z. no. 43593) compares favorably with the White Mountains birds. Specimens from Utah, Idaho and Nevada are on the average intermediate between the White Mountains and the California coast-belt birds, being nearer the California and Alaska ones. In other characters they also appear to be intermediate, but approach more closely the California and Alaska series. The gray dorsal nuchal band is not so evident in these Great Basin birds as it is in *apache,* and the central pileum is never a cadmium orange as in the Pacific Coast birds.

The four September specimens from the mountains of Jalisco in central-western Mexico compare favorably in measurements and other subspecific characters with the Pacific Coast birds of California and Washington. I have seen only two other adult male specimens from Mexico, one from Mexico City (Amer. Mus. Nat. Hist. no. 39341, type of *aztecus,* originally described by Lawrence), and one from Hidalgo not far northeast of Mexico City (Field Mus. no. 9488). From the limited material at hand, I cannot make definite statements concerning these two specimens from central-eastern Mexico, but they are not typical of the race *clarus,* and they appear to be closer to the race *olivaceus.* In comparing these two birds with *clarus,* the nearest geographical race, I find that the underparts are tinged with slightly more brownish buff, the central pileum is not so intense, and the olive green of the upperparts is not so green. In all these respects they are closer to *olivaceus.*

Geographical distribution.—The White Mountains of central-eastern Arizona from which the proposed race comes, consist of extensive mountainous country culminating in Baldy and Ord peaks which rise to approximately 11410 and 11350 feet altitude, respectively. They are separated from the Rocky Mountains of northern and eastern New Mexico by desert. On the north and east slopes of these peaks, the rise in altitude is comparatively gradual until an elevation of about 10000 feet is reached. This factor permits an extensive area of luxuriant boreal flora and fauna in the White Mountains and adjoining elevated tracts of land, and it accounts for the presence of such summer resident birds as Rocky Mountain Jays, not found elsewhere in Arizona.

The Blue Mountains, as well as Escudilla Mountain, should properly be considered faunally as part of the White Mountains, for they are both connected with the White Mountains by continuous Transition Zone forests of western yellow pine and its associated flora. The Blue Mountains are only a short distance southeast of the White Mountains and nearer New Mexico; in fact, they really comprise a spur of the White Mountain mass, arising to an elevation of about 9300 feet and separated from the latter by the Black River. Escudilla Mountain lies directly east of the White Mountains and rises more abruptly from the surrounding country to an altitude of about 10950 feet. Both of these ranges, the Blue and Escudilla mountains, also harbor breeding Golden-crowned Kinglets in their boreal zones.

The Mogollon and adjacent mountains of central-western New Mexico are either continuous, or practically continuous, with the White, Blue, and Escudilla mountains by way of Transition Zone forest. It would be expected that if the Golden-crowned Kinglet were to be found in the boreal zones of those mountains it would probably have the same characters as the form here described. Similarly, certain mountains of the Mogollon Plateau of Arizona, including San Francisco Mountain at its extreme northwestern limit in north-central Arizona, are continuous with the White Mountains by way of Transition Zone forest. Golden-crowned Kinglets are known from San Francisco Mountain, and a speciman (adult male, M. V. Z. no. 43593, October 24, 1922) is like the White Mountains form. Its underparts are, however, decidedly more brownish buff, which brings it in this respect closer to *olivaceus*.

There are certain ranges of southeastern and southern Arizona (Chiricahua, Graham, Santa Catalina, Santa Rita, and Huachuca) which harbor limited areas of boreal zone in which Golden-crowned Kinglets might find a favorable habitat. Indeed, these birds have been found during the summer of 1934 by Phillips (Condor, vol. 37, 1935, pp. 88-89), and in July, 1891, by Rhoads (Proc. Acad. Nat. Sci. Phila., 1892, p. 125), on the Santa Catalina Mountains, the southernmost record for the Golden-crowned Kinglet in the United States. These mountains are isolated ranges, separated from the mountains of central and eastern Arizona and from central-western New Mexico by the intervening Sonoran Desert of Lower Sonoran Zone. The environmental conditions in these mountains are similar to those in the White Mountains, and there is assumedly little or no intercommunication among the resident Golden-crowned Kinglet populations. It will be interesting in the future, when more specimens are collected, to compare series from these mountains with the series of kinglets from the White Mountains and to find whether similar environmental effects produce similar results within these isolated populations.

The specimens examined from Utah, Idaho, and Nevada are not typical of *olivaceus*, of the Pacific Coast. They show certain resemblances to the White Mountains specimens, but the similarities are not close enough to group them with *apache*. After more specimens are collected from the intervening Rocky Mountain and Great Basin districts, enough similarities may be found to extend the range of the proposed race to include these regions. Without further information on this subject all I can do is to designate the range of the proposed race as the mountains of central-eastern Arizona, including the White, Blue, and Escudilla mountains.

Remarks.—Having examined carefully series of Ruby-crowned and Golden-crowned kinglets, comparing the two species, character for character, I agree with Hellmayr (Catalogue of Birds of the Americas, 1934, pp. 510-514) that "*Corthylio*" is not enough different in characters which might be termed generic to be called a separate genus, that the genus *Regulus* should therefore include "*Corthylio*". I have also examined Golden-crowned Kinglets from the Old World (Germany, France, China, Japan) and

compared them character for character with one another and with the New World Golden-crowned Kinglets. I have found that *Regulus regulus* and *Regulus "satrapa"* do not differ enough in characters which might be termed specific to be called separate species. The differences are in degree and are so slight that they are purely racial. *Regulus "satrapa"* of the New World should therefore be changed to *Regulus regulus*. In this I also agree with Hellmayr, having first come to both conclusions of my own accord, after which I discovered that Hellmayr had previously reached the same conclusions.

KEY TO THE NEW WORLD GOLDEN-CROWNED KINGLETS:

*a*1. General coloration of upperparts olive gray to grayish olive; underparts tinged only slightly with buff; wings and tail decidedly longer; sides of head lighter; a grayer bird.

*b*1. Olive gray of nape blends gradually into olive of back; bill decidedly shorter and stouter; central pileum decidedly lighter in coloration (cadmium orange) ..... *R. r. satrapa*

*b*2. Olive gray dorsal nuchal band extending back to interscapulum and not blending with olive of back; bill much longer and more slender; central pileum much richer (orange chrome to flame scarlet)..... *R. r. apache*

*a*2. General coloration of upperparts richer—olive to olive green; underparts darker, tinged with brownish buff or dusky; wings and tail decidedly shorter; sides of head darker; a greener, more richly-colored bird.

*b*1. Olivaceus coloration of upperparts lighter, gray of nape unrestricted; tail slightly longer; side of head lighter; central pileum lighter.... *R. r. olivaceus*

*b*2. Olive green coloration of upperparts brighter and extending anteriorly over shoulders, restricting gray of nape; tail slightly shorter; side of head darker; central pileum richer..... *R. r. clarus*

Summary.—*Regulus regulus apache* is a new race of Golden-crowned Kinglet occupying as far as is known the mountains of central-eastern Arizona. It differs from *R. r. olivaceus*, its closest geographical counterpart, by being a grayer bird, having a noticeable, wide, gray, dorsal nuchal band, having decidedly longer wings, tail, and bill, and having a deeper and more richly colored central pileum. It differs from *R. r. satrapa* by having a wide gray dorsal nuchal band, a much longer, more slender bill, and a much more deeply colored central pileum. Finally, it differs from *R. r. clarus* by being a considerably grayer bird, having a wide gray dorsal nuchal band, and having longer wings, tail, and bill.

Arizona State Museum, Tucson, Arizona, August 10, 1936.

FROM FIELD AND STUDY

Bird Notes from the Hualpai Mountains, Arizona.—The Hualpai Mountains of central-western Arizona constitute an isolated range surrounded by desert. The highest peaks, at the north end of the range, reach an elevation of 8200 feet and are timbered with a limited growth of yellow pine, Douglas fir, aspen and an occasional white fir. This "island" of the Transition Zone has a small population of birds characteristic of this zone.

Between May 24 and 30, 1935, Mr. Paul Russell and I took notes on the birds of these mountains, mainly at the Hualpai Mountains County Park lying near the north end of the range. At this season, thirty-eight species of birds were recorded. The region was revisited in October, 1935, by Russell who made additional observations on birds.

Apparently the only published notes on the avifauna of the Hualpai region were recorded by Frank Stephens in the Condor (vol. 5, 1903, pp. 75-78, 100-105). Stephens' observations were made during a "fortnight" spent in these mountains in 1902, apparently the first two weeks in July. Reference to the above publication and to Swarth's Distributional List of the Birds of

Arizona (Pacific Coast Avifauna No. 10, 1914) leads me to believe that the following sight records, obtained during 1935, have sufficient interest to warrant publication. Most of these species were not reported by Stephens, and others were observed to be more numerous than Stephens' list would indicate.

Golden Eagle (*Aquila chrysaëtos*). Two were flying over Hualpai Peak and other high peaks on May 24.

Band-tailed Pigeon (*Columba fasciata*). Russell found five in the yellow-pine forest near the county park headquarters on October 21, elevation 6500 feet.

Broad-tailed Hummingbird (*Selasphorus platycercus*). Quite common in the chaparral association near park headquarters in May.

Western Wood Pewee (*Myiochanes richardsonii*). Stephens mentions no records for the Wood Pewee in the Hualpais. Russell and I found the species to be fairly common in the mountains in May. Pewees were seen in yellow pines at the Lawe Ranch, adjoining the county park on the east, and near park headquarters, 6000 feet elevation. Two birds were observed in a walnut grove at the DW Ranch, elevation 4200 feet, on May 25.

Clark Nutcracker (*Nucifraga columbiana*). Several were seen by Russell on the higher slopes of the Park, October 21.

Violet-green Swallow (*Tachycineta thalassina lepida*). On May 24 we observed at least ten flying about the slopes of Hualpai Peak, elevation 7800 feet.

Purple Martin (*Progne subis subis*). A pair observed at a tank on the DW Ranch on May 24, and seen daily until May 30, may have been nesting in the vicinity. Four martins were seen at the Lawe Ranch, May 27, elevation 5800 feet.

Rocky Mountain Nuthatch (*Sitta carolinensis nelsoni*). A pair found in the yellow-pine forest on the Lawe Ranch, May 27, probably nested in this forest although definite evidence was not obtained. On October 21, Russell observed a single nuthatch near the county park headquarters.

Cedar Waxwing (*Bombycilla cedrorum*). Three were observed in a walnut tree on the Newberry Ranch at 4000 feet elevation, May 27. The species is rare and irregular in occurrence in Arizona.

Grace Warbler (*Dendroica graciae*). Stephens did not find this warbler when he visited these mountains in July, 1902. We were surprised to find it quite common in yellow pines near park headquarters. Several singing males were observed in the last week of May and the species was apparently nesting in the vicinity.

Painted Redstart (*Setophaga picta*). On May 30, Russell found seven adults in Wheeler Canyon, northeast of Hualpai Peak. Birds were observed in the oak and pine forest in the canyon at 6500 feet. Since Stephens did not find the species in these mountains in 1902, these birds probably represented a colony that had become established since that time. This record extends the known summer range of the species some distance northwest of the northern limits recorded near Prescott.

Lazuli Bunting (*Passerina amoena*). On May 27, a male bunting was discovered singing from a perch in a yellow pine on the Lawe Ranch.

Chipping Sparrow (*Spizella passerina arizonae*). Stephens did not list this species from the Hualpais and breeding records for western Arizona are few. Several chipping sparrows were found in May in the yellow-pine forest. On May 24, a nest containing four eggs was discovered in a small yellow pine in the county park, elevation 6200 feet.

Black-chinned Sparrow (*Spizella atrogularis*). Stephens (*op. cit.*, p. 103) established this species as a breeding bird of the Hualpai Mountains. He found both adult and immature birds at 6000 feet in July. Russell and I noticed that this species was common in *Ceanothus* and manzanita thickets in May. Birds were observed in the chaparral of the north slopes between 4200 and 6200 feet elevation. Male birds were in full song and were actively engaged in defending nesting territories against other individuals of the same species. No nests were discovered although females were evidently incubating eggs during this period.—JAMES O. STEVENSON, *Wildlife Division, National Park Service, Washington, D. C., August 3, 1936.*

Habits of Lewis Woodpeckers in Winter.—A detailed account of the winter behavior, especially the acorn-storing activities, of the Lewis Woodpecker (*Asyndesmus lewis*) was published recently by J. E. Law (Condor, vol. 31, 1929, pp. 233-238). His story dealt mainly with analysis of the mannerisms connected with the storing habit and the implications of them. This record of observations is remarkably complete, but the return of the bird to the store was not actually seen and Law pointed out that he had no evidence "that this [individual] woodpecker ever ate any acorns once stored."

Within a few weeks after the appearance of Law's article I had opportunity to watch a large group of Lewis Woodpeckers and to see at least one eat acorns that had been stored. This time, however, I failed to learn how the acorns had reached their storage places. The birds were watched on February 15 and 16, 1930, close to Butte Slough, one mile west of West Butte, Sutter County, in the Sacramento Valley, California.

One hundred or more of the woodpeckers were active on the ground and among valley oaks in a grove in which Yellow-billed Magpies were being studied. A considerable amount of jealousy was exhibited by various members of the company. Once, two individuals in flight overhead each in turn flew at the other, and then both lit. On several occasions a Lewis Woodpecker flew after and chased a California Woodpecker or a Red-shafted Flicker. Other birds pursued were the Yellow-billed Magpie and Downy Woodpecker. At 8 a.m. on the second morning, I heard a Lewis Woodpecker several times utter alarm notes near a particular girder of the bridge in that vicinity. At that point I discovered a Screech Owl perched on the girder. Only once was the order reversed and a Lewis Woodpecker was driven from the neighborhood of a tree by California Woodpeckers. Not only did the Lewis Woodpecker seem to be the most numerous bird species in the vicinity, but also these birds were conspicuously noisy. One of their notes seemed to have much of the quality of the bark of the Douglas ground squirrel.

Late in the morning and about noon certain individuals were seen a great many times to make long and apparently aimless flights into the air over the trees. Sometimes they appeared definitely to fly after and catch insects in the air. They spent much time about the trunks of the oaks and on the ground about the bases of the trees where they picked at objects.

Each morning at about 8 a.m. a Lewis Woodpecker was watched as it flew to a telephone pole (fig. 41) at the side of the road. Here the bird settled before a large crack in the pole ten or fifteen feet above the ground and proceeded to pick into the cracks. Once an object was dislodged which fell to the ground. The woodpecker paused in its probing and watched the object fall. When this spot on the pole was examined, pieces of acorns of valley oak were pried out from storage places one to four inches back from the surface. At two places the cracks showed fresh evidence of digging where the bird had enlarged the crevice. On the ground beneath, many halves of shells of acorns were scattered within six or eight feet of the base of the pole, but none was seen farther from it. All of them appeared freshly broken. The nearest oak trees were about thirty yards distant. On the second morning the Lewis Woodpecker drove a California Woodpecker from this pole before it started to feed there. Movements of the mandibles could be seen plainly as the bird picked at the acorns.

Fig. 50. Telephone pole near West Butte, Sutter County, California, where a Lewis Woodpecker fed on stored acorns. Photographed on February 16, 1930.

One valley oak in the vicinity had crannies in its bark filled with pieces of meats of acorns, but no shells were found. There was no evidence of hole drilling here. Some whole acorns placed six feet above the ground on top of wooden bridge supports may have been stored there by woodpeckers.

It was not possible to determine which species of woodpecker had placed the acorns in the storage places, but the situation was remarkably like the one described by Law. There was no question but that the Lewis Woodpeckers not only had possession of the supply when these records were made, but that also they were making regular use of it. Evidently storage activities sometimes may have definite value for these birds in their late-winter feeding.—JEAN M. LINSDALE, *Museum of Vertebrate Zoology, University of California, Berkeley, February 20, 1936.*

A Tree-nesting Colony of White-crested Cormorants in Trincomali Channel, British Columbia.—As far as I am aware, only one pair of Double-crested Cormorants (*Phalacrocorax auritus*) has been recorded as breeding on the British Columbian coast, on the rocks of Bare Island, Haro Straits (Munro, Condor, vol. 30, 1928, p. 327). It might therefore be well to record a tree-nesting colony in Trincomali Channel.

In the early spring of 1934, while passing down the channel in his launch, Mr. F. C. Barrow observed several large nests on some scrubby juniper trees on the northernmost of two small rocks known as the Twins or Ballingall Islets. These he reported to Mr. W. A. Newcombe who on May 8 of that year returned with him and identified the owners of the nests as of the species *Phalacrocorax auritus*. On June 14, 1936, I accompanied these gentlemen on a visit to the colony. We arrived off the rocks about 11:30 a.m., in a heavy rainstorm and dropped anchor about 50 yards from the nests. The cormorants showed some slight uneasiness as the anchor was gently lowered, but as we remained in the cabin watching them through the open hatch, they soon settled down, their chief concern at the moment being the heavy downfall of rain.

Fig. 51. One of the Ballingall Islets, Trincomali Channel, British Columbia, where White-crested Cormorants nested in 1936.

Subspecific identification was not attempted on this trip as it was thought unwise to disturb so small a colony while incubating. [However, later, two examples were obtained and forwarded to the California Museum of Vertebrate Zoology, where they were identified definitely as of the race *cincinatus*.] About 23 cormorants were observed in four or five half-dead junipers at the time of our arrival, but as the rain ceased others of the species kept flying in until as many as 30 could be counted in the trees at a time, some incubating with their mates standing on the edges of the nests, others perched on the higher branches carrying on a noisy gargle of conversation, or waving their necks in play or argument over those in the nests below.

After closely observing the birds from the cover of the launch for an hour or more, we landed on the rock and inspected the nests. Twenty-three nests were counted, all strongly constructed of sticks and seaweed, a few lined with wintergreen (*Pyrola*), and two holding several primary feathers of Glaucous-winged Gulls and immature cormorants. Of the ten nests that it was possible to see into, four were empty, three held four eggs, and the remainder two to three eggs each. A number of the eggs were pale blue, but most were stained buff or pale green, according to the nature of the lining of the nests.

Among the roots of the junipers on which this species was nesting, and on the rough rock ledges below, were six or eight empty nests of *Phalacrocorax pelagicus*. These and three or four others, belonging to this latter species, on the South Twin, were substantially built of seaweed and green herbage, and all were less than six feet above high water. These nests were only just completed and held no eggs.

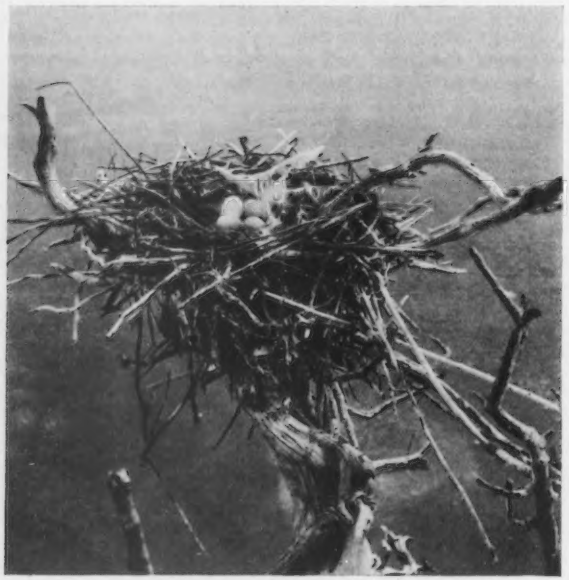

Fig. 52. Nest of White-crested Cormorant in a juniper tree on a rock in Trincomali Channel, British Columbia.

Of other birds, it was estimated that about 200 Glaucous-winged Gulls were present; fifty nests of this species were found on the north, and 35 on the south, rock, all with eggs. One pair of Pigeon Guillemots was suspected of nesting on the north rock and about half a dozen corvine gangsters were carrying on their nefarious work among the birds of both rocks.—G. D. Sprot, *Cobble Hill, Vancouver Island, British Columbia, July 20, 1936.*

Surf Scoter and Caspian Tern in Arizona.—In the Jacot collection of birds acquired by the University of Arizona in 1932, there is a specimen of Surf Scoter (*Melanitta perspicillata*). The bird was taken by Mr. E. C. Jacot at Hillside, Yavapai County, Arizona, on October 20, 1929. It is an adult female, now no. 113 in the University collection. This is believed to be the first record for the State.

On April 30, 1936, the writer was traveling by auto through Yavapai County. As we approached a small reservoir recently formed by a dam across the upper Verde River close beside the highway about twenty miles north of Prescott, we noticed some conspicuously white birds. A stop was made to identify them, and about ten individuals were observed in flight over the small lake. With 8-power binoculars the birds were carefully studied for some time, during which interval a few came close enough to permit of a careful check of their markings.

They were, unmistakably, large terns, and the red beaks, black caps, black feet, black wing tips, and large size were clearly distinguished. I believe they were undoubtedly Caspian Terns (*Hydroprogne caspia imperator*), not hitherto recorded in Arizona. I would hesitate, even so, to present the record without a specimen, were it not for the fact that only two weeks previously I had carefully studied Royal Terns in flight at Puerto Libertad, Sonora, Mexico, so that the differences in the two species were clearly in mind. Two specimens of the Royal Tern were secured at that time. The birds now reported were so much like the Royal Terns in beak, black cap, and black feet, as to be indistinguishable on those points, but the conspicuously dark wing tips, and the large size were distinctive. (Royal Terns in flight overhead appear to have wholly white wings.) That the tail was forked was certain, but sufficiently satisfactory views of spread tails were not secured to determine the degree of forking as compared with the Royal Tern.

Unfortunately, there was no gun in the party and it was impossible to collect a specimen. On the basis of the observations here set forth, however, I present the record for what it is worth. The range of the species is such that its occurrence in Arizona during migration is by no means improbable.—CHARLES T. VORHIES, *University of Arizona, August 10, 1936.*

Poor Selection of Building Sites.—That birds often make mistakes in choosing sites for their nests is well known to egg collectors and to many observers of bird life. An instance of this sort was recently related to me by Mr. W. H. Jilbert of Palo Alto, who, as does his wife, takes a great interest in setting out free rations in their garden for bird visitors. This last spring a pair of San Francisco Brown Towhees (*Pipilo fuscus petulans*) built a nest there, selecting a small apple tree for the site and placing it in a fork a few inches from, and directly under, an apple that was hanging from a small twig. Four eggs were laid in the nest, and incubation commenced. Unfortunately the birds did not realize that the fruit was still growing, and one morning Mrs. Jilbert was greatly disturbed to find that the apple, possibly jarred by one of the birds entering or leaving the nest, had fallen on top of it. On removing the apple the eggs were found intact, but the birds were evidently so discouraged by the incident that they did not return.

This tale brought to mind a case of misplaced confidence on the part of a pair of Song Sparrows that built a nest in a large thistle plant early in May, 1895, and which, when found by the writer, seemed to be in a logical situation. A visit to it a few days later, however, showed that the selection of the site was decidedly a poor one; for the thistle had grown with such rapidity and unevenness that the nest was so tilted as to be unusable for incubating purposes though the eggs were still in the lower edge. It looked as if the birds could easily have woven in some more material on the low side so as to make it safe for use, but no attempt was made to improve matters and the nest was deserted.

A remarkable selection of nesting site was that of a California Quail (*Lophortyx californica*) that scratched out a hollow, in plain sight under the lower end of a one-horse treadmill which, before the days of widespread electric power, was daily used to churn the butter on my dairy in Marin County. The nest side of the churn was only four or five feet from the basement wall of the milk house, leaving a passage-way used by the buttermaker in his duties. In spite of the quail being frightened away every morning by the clattering of the treadmill and often disturbed by someone passing, thirteen eggs were laid before the nest was deserted.

Again, a different but very excusable sort of careless selection was that of a Western House Wren (*Troglodytes aëdon parkmanii*) that built a nest in the end of the exhaust pipe of a temporarily idle stationary steam engine attached to a large pump. Fortunately for the wren I caught sight one day of a bit of twig projecting from the end of the pipe and saved bird and nest from being blown to bits by the first turn over of the engine, which was soon to be put into use, and also saved the five eggs that were in the nest.—JOSEPH MAILLIARD, *California Academy of Sciences, San Francisco, California, August 24, 1936.*

A New Record for Parapavo californicus (Miller).—The vigorous program of road building in southern California has resulted in bringing to light new fossil deposits. The present record is made possible by one such discovery. Mr. F. R. Pracht, State Resident Engineer, and Mr. Charles Reynolds of the R. E. Campbell Contracting Company, recently called the attention of the Los Angeles Museum to scattered fossil remains occurring in gravel beds at a depth of about forty feet, along the Imperial Highway road-cut now under construction southwest of La Habra, near the Los Angeles-Orange county line. These deposits appear to be stream laid and, according to Dr. Chester Stock, include remains of mastodon, ground sloth and horse of Pleistocene age, as well as a few well-worn fragments of shell and fish bone, and a shark tooth, which likely were washed in from an earlier marine deposit.

Of especial interest to me is a well-petrified distal end of radius of a turkey which I believe may be safely assigned to the Pleistocene *Parapavo californicus* on the basis of characters described in an earlier paper (Howard, Univ. Calif. Publ. Geol. Sci., vol. 17, 1927, p. 17, and p. 45, pl. 7) as follows: "Ridge at distal end, external aspect.—(Pl. 7 *d*) . . . ridge paralleling border of shaft and continuous distally with border of scapho-lunar facet, ridge long, most nearly approaching *Agriocharis*; . . ." (2) "Tendinal groove at distal end.—Pl. 7, *e*) Faint notch, not so deep as in *Agriocharis*; in *Meleagris*, broad and shallow . . . ."

This is the first definite record of *Parapavo californicus* outside of the asphalt deposits of Rancho La Brea and Carpinteria.

In connection with this record, I take the opportunity to mention the occurrence of two other specimens of fossil meleagrid which were taken from Pleistocene deposits in a storm drain

excavation at Workman and Alhambra streets, Los Angeles, in 1933. The specimens, a distal end of tibiotarsus and complete pedal phalanx, both petrified, may be assignable to *Parapavo*, but unfortunately they do not possess any diagnostic generic characters by which to make definite identification. For this reason they have been heretofore unrecorded.

The only other fossil meleagrids which have been recorded from California are from the Pleistocene of Potter Creek Cave and of Mission San José. Eight specimens from the former locality were originally recorded as *Meleagris* sp., though later Miller, Carnegie Inst. Wash., Publ. 349, 1925, p. 67) indicated that they were "referable either to *Parapavo* or to *Meleagris*." The fragment of sternum from the Mission San José locality is the type specimen of *Meleagris richmondi* Shufeldt.—HILDEGARDE HOWARD, *Los Angeles Museum, Los Angeles, California, July 14, 1936.*

Pasadena Screech Owl and Desert Sparrow Hawk in the Same Nest.—A most interesting set of eggs was found on the Mohave Desert north of the San Bernardino Mountains on May 5, 1935. I discovered a bird about eight inches down from an opening which was five feet up in the trunk of a Joshua tree. It was not a surprise to remove a Pasadena Screech Owl (*Otus asio quercinus*), but it certainly was one to feel the bottom of the cavity well filled with eggs.

The first egg removed was brown instead of white and I began to suspect the reason for the large set. The nest proved to hold four each of the owl and Desert Sparrow Hawk (*Falco sparverius phalaena*), all of which were normal for size, shape, and color. The two kinds of eggs all lay on the old wood at the bottom of the hole and were well intermingled. Those of the owl showed slight incubation while those of the hawk seemed to be slightly addled. Thus the evidence indicates that the owl took possession of the nesting site before the hawk had started to incubate her set of eggs.—WILSON C. HANNA, *Colton, California, August 26, 1936.*

Opinions Aroused by Pettingill's Monograph on the American Woodcock.—One by one and at an accelerated rate our North American birds are being studied for the purpose of writing exhaustive accounts of their lives. On April 30, 1936, the Boston Society of Natural History published as volume 9, number 2, of its memoirs the final report based on a five year study of the American Woodcock by O. S. Pettingill, Jr. The volume contains 223 pages and 10 plates; it sells for $3.50 in paper covers.

Dr. Pettingill's patient industry in preparing this book will be appreciated by those bird students of the future who will have to come to it for an acquaintance with this reclusive bird, especially if the whims of civilization completely exterminate it. He has made a better than average report upon a difficult topic. It is obvious, even from casual examination, that the aim primarily was to provide an instructive book, not one that would be merely pleasing to the reader. It is fair, then, to consider the work as a pattern for other serious studies of single species and to see if any improvements in method be desirable. Persons intending to prepare monographs on single species can learn much by thus analyzing the reports already in print. In the following paragraphs are indicated several opinions on the preparation of a report on the life of a given bird, along with examples, from Pettingill, which do not agree with them. According to these opinions a writer should observe especially the following rules:

Discard any part of an original outline for which materials do not become available.

"Defense of Nesting Territory" (p. 287) is discussed without any supporting evidence. The third major division of the book, "The Struggle for Existence", is so far below the standard of the rest as to indicate that it should have been eliminated and the usable facts placed in other sections.

Give full details where required for clear indication of significance.

Usefulness of the list of vernacular names (pp. 187-188) would be enhanced if we knew something about each one—the time, place, and frequency of application. Surely the most important parts of such a list would be citations to authorities.

Base general statements on evidence presented, not on some generally accepted theory or supposition.

It is demonstrated (p. 278) that woodcock sometimes "travel at a low level", but where is the evidence that they "generally" do? Uncertainty in treatment of the topic "Breeding Territory" is indicated (p. 280) first by declaring that the "rule" implied in the concept is in the woodcock "subject to great variation," and second by defining, in the first three paragraphs, five separate kinds of territory—breeding territory, wooded territory, open-country territory, diurnal territory, and nesting territory. Considerable influence of a traditional theory of territory is shown. Is there evidence (p. 305) that polygamy actually occurs in this bird? The explanation of injury feigning (p. 332) seems not to follow the evidence or even to agree with it. There is probably

as much volition involved here as in the mating flight or any other type of motion. It may be doubted that the bird consciously plans any of its activities. The discussion of migration (p. 277) seems to say that migration in the woodcock results from influence of the gonads and is controlled by weather conditions, but surely this is not the correct interpretation of the "recently advanced theories" alluded to.

Condense such items as those dealing with occurrence.

The forty-five pages of material on distribution and abundance could easily have been tabulated in much smaller space. The half page devoted to California could be replaced with the statement that there is no satisfactory record of the species for this state. Ten degrees of abundance require too fine discernments to be appreciated by the reader; anyway it is doubtful if the information justifies more than five such adjectives.

Verify the spellings of names of persons.

Names like Hoffmann, Oldys, Ridgway, Saunders, and Seebohm (each misspelled) can be found with very little search.

Make the printed report compact.

A book more than nine inches wide and twelve inches high is too cumbersome for ready handling in reading or storing; not many book shelves will accommodate it. The wide type bed (6⅜ inches) makes reading tiresome and wastes paper where short lines occur, as in tables and in the bibliography. The colored plate could have gone in a seven-inch book without reduction.

Place photographs with the text.

The increased value of illustrations near the discussion rather than collected in plates at the end of the volume is surely worth the possible greater cost. Also, it more than balances the loss of detail which may result if they are printed on text paper.

Use terms in their generally accepted meanings, or else define them.

It is misleading to describe bill, eye, and feet under "fleshy parts" (p. 188). In the diagram and discussion of flight song the term vertically is used in a sense opposite its usual meaning. The reader is likely to wonder what is meant by "level apex" (p. 288). It is not quite clear what is meant by the term "successful species" (p. 245). Can any species exist at all that is not successful according to the definition given?

Make the summary an abstract rather than a list of contents.

A large number of important facts could be recounted within the two pages devoted to a bare listing of the topics treated.—JEAN M. LINSDALE, *Museum of Vertebrate Zoology, University of California, Berkeley, August 7, 1936.*

NOTES AND NEWS

With completion of its fortieth volume, an event now but two years in the future, the issue of a fourth 10-year index to *The Condor* will be in order. The preparation of such a decennial index requires the services of a person who knows current ornithology, who understands avian nomenclature and synonymy as pertaining to the period in question, and who gets personal pleasure out of accurately organizing a great mass of detail. The first 10-year index, issued in 1909, was the work of the late Henry B. Kaeding; the second 10-year index, issued in 1919, was the work of John R. Pemberton; the third 10-year index, issued in 1931, was the work of George Willett. What Cooper Club member, who feels qualified to do the fourth 10-year index, and who really wants to do the job, will undertake this service to the Club and to our science? It is none too soon for someone to announce himself and to begin work; for the manuscript should be completed, all ready for the printer, early in 1939.—J. G.

Circumstances again force us to announce a certain editorial policy in connection with *The Condor*, namely, that of curtailing the function of reviewing current literature. This function is one that we would *like* to exercise, but we simply can*not*, consistently, for lack of space. We feel that all the Cooper Club's available resources should be conserved for printing in our magazine as many as possible out of the large offering of original manuscripts. The best we are able to do in the reviewing line is to give brief notice, under "Notes and News", of an occasional publication that seems to have special bearing on western ornithology—or otherwise, merely as the spirit moves. Be it known, then, that the editors of *The Condor* do not want books or publications sent them with any expectation that these will

be reviewed or even listed in our printed columns. The reviewing function in America is, perhaps needless to remark, performed exhaustively by *The Auk*.—J. G.

The trend of human activity continues to be toward destruction of wild life, of well-nigh all kinds. True, we hear more than ever the phrase "wildlife conservation"; but wild life in the minds of most persons using that phrase means "game", and the purpose of game is to be *shot*. Game-bird "management" is seriously considered as on a par of "practicality" with poultry husbandry. But such activities seem not in any large degree likely to lead to preserving native animal life in its truly *wild* status. Indeed, too often they mean introduction of alien stocks that promise to "do better" than native ones or to be more of an attraction to the shooter. And the fate of any animal kind that is not "of use" (as game) is immaterial. Only "sentimentalists" can have regard for *it!* We have just re-read Lee Chambers' vigorous indictment, in September *Condor* (p. 199), of the practice of "targeting" anything that's alive, and Fred Dale's story in the same issue (p. 208), of the airplane shooting of American eagles. That these and many other similarly destructive activities go on in this year of 1936, without public outcry, or indeed without audible remonstrance from authoritative agencies of "conservation", gives us fair ground, we think, for our feeling, at the moment this is written, of extreme pessimism for the future of general wild life preservation.—J. G.

Correction.—In making up the last issue of *The Condor*, the blocks for figures 33 and 36 in the article by Weydemeyer and Marsh (vol. 38, September, 1935) were transposed by mistake so that the caption beneath the cut on page 189 refers to the photograph on page 197, and vice versa.

MINUTES OF COOPER CLUB MEETINGS

SOUTHERN DIVISION

JULY.—The regular monthly meeting of the Southern Division of the Cooper Ornithological Club was held at the Los Angeles Museum on Tuesday, July 28, at 8 p.m., with President Little in the chair and twenty-two members and guests present. Minutes of the Southern Division for June were read and approved. Applications for membership were: Raymond M. Selle, 1562 Munson Ave., Los Angeles, Calif., by Luther Little; John Thomas Wright, Box 146, Pomona, Calif., by John McB. Robertson; Harry R. Painton, 4605 Mission St., San Francisco, Calif., and Glenn B. Head, U. S. Forest Service, Sonora, Calif., by W. Lee Chambers; John H. Carter, Sod House Camp B. F. No. 2, Burns, Oregon, Mrs. H. G. Savage, Redmond, Oregon, and Robert Edgar Towle, Malheur Migratory Waterfowl Refuge, Burns, Oregon, by Stanley G. Jewett.

Dr. Bishop reported on the recent book by George M. Sutton, on his experiences since he started collecting. Band-tailed Pigeons were reported as nesting in Altadena and Monrovia, and Dr. Bishop reported on the taking in Bear Valley of the Red-breasted Sapsucker. Sidney B. Peyton reported the taking on July 22 of a nest of the Green-backed Goldfinch with three eggs and one egg of the Dwarf Cowbird. An invitation to hold the August meeting at the aviaries of Mr. W. J. Sheffler was extended to the club by Mr. Sheffler, the meeting to be held on Sunday afternoon, August 30. After adjournment the members went to the first floor where the lights were turned on in the bird room of the museum, and the varied exhibits were enjoyed by all.—Adjourned.

P. S. A belated visitor arrived after a number of the members had gone home, carrying a motion picture projector, and said that he had some pictures that he would like to show the club; so a place was arranged in one of the offices, and the remaining members were treated to some wonderful motion pictures, first of Crater Lake, Oregon, and then of the nesting in the heart of Hollywood of an Anna Hummingbird. This nest was built on the arm of a "Bus Stop" sign, across the street from the El Trocadero Cafe. The film showed the nest from the time the eggs were laid until the young had left. The feeding of the young by the mother bird was most interesting, as it looked as if the old bird would push her bill clear through the little ones. Dr. Davidson promised to show his pictures again, later in the year, when all the members could see them.—SIDNEY B. PEYTON, *Secretary*.

AUGUST.—The regular monthly meeting of the Southern Division of the Cooper Ornithological Club was held on Sunday, August 30, at 2:30 p.m., at the aviaries of W. J. Sheffler, at 535 New York Street, Hawthorn. Nearly two hours were spent under the guidance of Mr. Sheffler inspecting the different pens which housed a great variety of birds, some of them so rare that they are almost priceless, parrots of all sizes and colors, cockatoos, Grass Parrakeets, many of them in family groups, doves of different kinds, pheasants, quail, ducks, geese and rails. Magpies, crows and ravens occupied a corner of the large flying cage, and underneath them in another pen a big porcupine clambered around in some tree branches. Of special interest were the two young Harris Hawks that Mr. Sheffler took from a nest last spring in the Colorado River bottom near Blythe, and the young Saw-

whet Owl that he had taken from a nest at Bluff Lake, San Bernardino Mountains, and successfully raised to maturity.

Just before we left it was amusing to watch a male Valley Quail chasing a Wood Rail, from Central America, almost twice his size along one side of the big cage. About four o'clock we got in our machines and followed Mr. Sheffler to his home, and there found a great variety of small finches, tanagers and grosbeaks. Chairs were placed on the spacious lawn under the shade of trees and a short business session was held with Vice-president Laura B. Law in the chair. Minutes of the Southern Division were read and approved. Minutes of the Northern Division for July were read by title only. Names proposed for membership were: Kenneth Emory Vorce, 223 Darlington Ave., Buena Park, Calif., and James Lew Wallace Stitt, Chowchilla, Calif., both by John McB. Robertson. A letter from James B. Dixon, who said he was ready to show some motion picture films in color at the September meeting, was read.

The following proposal for Honorary membership was read: "We, the undersigned members of the Southern Division of the Cooper Ornithological Club, hereby propose for Honorary membership in the Club, Loye Miller, of the University of California at Los Angeles. For 31 years has Loye Miller been a loyal member of the Club; for a large proportion of that time has he carried responsibility, in one office or another, in connection with the affairs of the Club. His Presidency of the Southern Division, of the Club at large, and of the Board of Governors has coincided with the period of the Club's greatest success as an agency of disseminating scientific knowledge and esthetic appreciation of bird life. Dr. Miller's own scientific contribution to a knowledge of the natural history of birds, both living and extinct, has been pre-eminent. In summation, we believe him superiorly qualified for the recognition we propose". Signed by Howard Robertson, Harry Harris, W. Lee Chambers, John McB. Robertson, Sidney B. Peyton, Hildegarde Howard, and Guy C. Rich. Dated June 29, 1936. The chair remarked that following the provisions of the Constitution no action would be taken upon this proposal until after its second reading.

A rising vote of thanks was given Mr. Sheffler for his hospitality in entertaining the Club for the afternoon, and the meeting adjourned. It certainly was a treat to everyone present to see such a wonderful collection of birds from different parts of the world, all so healthy and well cared for, and showing the constant attention that makes them that way.

Adjourned.—SIDNEY B. PEYTON, *Secretary*.

NORTHERN DIVISION

JULY.—The regular monthly meeting of the Northern Division of the Cooper Ornithological Club was held on Thursday, July 23, 1936, at 8 p.m., in Room 2503 Life Sciences Building, Berkeley, with President Miller in the chair and about 35 members and guests present. Minutes of the Northern Division for June were read and approved. There were no minutes from the Southern Division. Applications for membership were: Daisy M. Lory, 497 Forest Street, Oakland, proposed by Jean M. Linsdale; Mary Elizabeth Quinn, 2721 Haste Street, Berkeley, proposed by J. Grinnell; Walter G. Schulz, 201 Ridgway Avenue, Oakland, proposed by Elizabeth H. Price; John Herbert Gibson, 1027 Merced Avenue, Berkeley, proposed by Alden H. Miller.

Mr. James Moffitt gave the highlights of the sixteenth annual conference of the Western Association of State Fish and Game Commissioners, in session in San Francisco. Explanation of the Taylor Grazing Act revealed that its administration had resulted in the favoring of grazing interests rather than those of wild life. H. L. Shantz had told of the new grazing permit policy for 1936 to 1945 inclusive, which provides for a maximum reduction of 30% in numbers of live stock grazed by term permittees over the ten-year period. While expressing anxiety over the wild life situation, he believed in the continued use of the national forests for grazing. Ira Gabrielson had brought out the fact that the waterfowl program of the Biological Survey had gone ahead even faster than had been anticipated; of the million and a half acres of land acquired for the purpose, 50 per cent had already been restored to condition for refuges. In an outstanding address, J. N. Darling had urged unification of all wildlife interests under a Wild Life Federation, the sole purpose of which is to bring these interests to the attention of congressmen. Dr. Miller asked whether actually any move had been made to establish the Federation in California. The reply was that, on Mr. Darling's authority, nothing had yet been done.

The meeting was opened to reports of field observations. Mr. Kinsey told of an attempt to band Canada Geese at Honey Lake, and of the obtaining of two female Townsend Solitaires for his aviaries. There was some discussion as to whether or not both birds of a pair in this species remain in the nesting vicinity during incubation. Mr. Moffitt reported greater numbers of ducks at Honey Lake than at any time since 1931, due partly perhaps to the waterfowl conservation program, but largely to improved water conditions. He also mentioned the nesting of Town-

send Solitaires in cut banks along the highways in the Tahoe region.

The speaker of the evening was Dr. Alden H. Miller, his topic, "A Month in Arizona." He told of a recent field trip, the purposes of which were to become acquainted with birds remaining in the lower country during the summer and to collect material for the work of Mr. Engels on thrasher anatomy. At that season the bird life in the sahuaro belt centered about the clusters of flowers and fruit which crown the giant cacti. Many species, including the White-winged Dove, Palmer and Bendire thrashers, Cactus Wren, Verdin, and Gila Woodpecker, were seen to make use of this fruit. In the Tumacacori Mountains, effects of over-grazing were evident in the retreat of the Scott Sparrow and the Mearns Quail. In the Chiricahua Mountains, Dr. Miller had the privilege of meeting Mr. Frank Hands, since passed away, who has piloted many collectors through the region. Two weeks were spent in the Lower Sonoran zone, in studying the four species of thrasher: Bendire, Palmer, Crissal, and LeConte. Doves were plentiful in this region. At the end of the meeting many specimens were examined, those of the White-necked Raven, Broad-billed and Rivoli hummingbirds, and Cardinal proving of the greatest interest.

Adjourned.—FRANCES CARTER, *Acting Secretary.*

AUGUST.—The regular monthly meeting of the Northern Division of the Cooper Ornithological Club was held on Thursday, August 27, 1936, at 8 p.m., in Room 2503 Life Sciences Building, Berkeley, with President Miller in the chair and about sixty-five members and guests present. Minutes of the Northern Division for July were read and approved. Minutes of the Southern Division for July were read. Applications for membership were: George White Barrington, 2151½ Russell Street, Berkeley, and Paul T. Wilson, Marin Junior College, Kentfield, California, proposed by J. Grinnell; (Mr.) Jean Hulme Linford, Museum of Vertebrate Zoology, Berkeley, proposed by William H. Behle.

In connection with the question of organizing the Wild Life Federation in California, brought before the July meeting, Mr. Joseph Dixon reported that, on August 12, the Junior Chambers of Commerce in Oakland, Los Angeles, Sacramento and other cities had decided to sponsor the Federation, beginning with organization in the counties. He suggested that official representatives of the Cooper Ornithological Club be designated to take part in future organization meetings, and that the Northern and Southern divisions be represented individually in their respective counties. It was moved, seconded, and passed, that the Chair appoint a committee to serve in that capacity for the Northern Division. [E. L. Sumner, Jr., chairman, B. C. Cain and W. H. Behle were appointed.]

President Miller called attention to a name appearing among the applicants for membership at the July meeting of the Southern Division, that of Dr. Harry R. Painton, present at this meeting. It was Dr. Painton who, together with Chester Barlow, Fred A. Schneider and Wilfred H. Osgood, organized the Cooper Ornithological Club, in June, 1893, at Santa Clara, California. After a long and busy career in medicine, Dr. Painton is renewing his affiliation with the organization which he helped to found.

Mr. Grinnell reported on a volume recently issued by the Harvard University Press: "Georg Wilhelm Steller, The Pioneer of Alaskan Natural History," by Dr. Leonhard Stejneger. Mr. W. B. Davis reported the finding of a nest of the Sandhill Crane at the southern end of Alturas Lake, Idaho, and having observed hundreds of Pintails flying southward over that lake during the first week in August, but without stopping there. Mrs. Allen asked whether it was usual to find White Pelicans around the south end of San Francisco Bay as early as July 6, when she had seen them there. Mr. Davis recalled that some individual pelicans elsewhere apparently summer where no nesting is attempted. Mr. Lee Arnold told of having seen a Man-o'-War Bird flying over the San Diego Quarantine Station on July 11.

The main address of the evening, "The Breeding Puget Sound Sparrow, and Geographic Variations in Behavior," was given by Miss Barbara D. Blanchard. She told of a recent trip to Friday Harbor in the San Juan Islands, off the southeastern tip of Vancouver Island. Her purpose was to study the Puget Sound Sparrow on its breeding grounds, in order to complete the picture for comparison with the Nuttall Sparrow. Miss Blanchard did not recover any of the individuals which she had banded here, but other banding records give evidence that birds wintering in Berkeley may travel as far north as Vancouver Island. Although the Nuttall and Puget Sound sparrows are so similar in appearance as to suggest only incipient races, they show marked differences in physiology and behavior. Diagrams illustrating the development of territorialism and female reproductive behavior showed the whole pattern to be compressed into a much shorter time in the case of the migrating subspecies. Inquiry among residents of the town brought out the interesting fact that the Puget Sound Sparrow sings at night, as does the Nuttall here.

Adjourned.—FRANCES CARTER, *Recording Secretary.*

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